mental cost savings, $3,780-$5,518). **CONCLUSIONS:** Comorbidity improvement and resolution in CD can be achieved with BC, which confers a commensurate cost savings to the health care payer.

## Diabetes/Endocrine Disorders – Patient-Reported Outcomes & Preference-Based Studies

### PDB51

### A COMPARISON OF INSULIN ADHERENCE IN PATIENTS WITH TYPE 2 DIABETES INITIATING THERAPY WITH INSULIN DETEMIR FLEXPEN® OR NPH INSULIN IN A VIAL

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**OBJECTIVES:** Non-adherence to insulin therapy in patients with type 2 diabetes presents a serious challenge. Potential explanations for non adherence may include aversion to insulin self-injection and fear of hypoglycemic events. In clinical trails, insulin analogs have shown to reduce the risk of hypoglycemic events versus human insulins, and a recent review suggests that insulin delivered via a pen device may result in greater adherence versus vial and syringe. This study was conducted to compare the adherence rates of patients initiating basal insulin therapy with insulin detemir (IDet) FlexPen® versus those initiating basal insulin therapy with NPH via vial and syringe. **METHODS:** Data were gathered from a large US national payer retrospective claims database, and included only patients with type 2 diabetes that initiated basal insulin therapy with either IDet FlexPen® or NPH in vials. Patients with claims for any other type of insulin, other than the index insulin formulations during the 12-month observation period were excluded. Patients were defined as being adherent to therapy if they had a medication possession ration (MPR) of at least 0.80 in the 12-month follow up period. **RESULTS:** The IDet FlexPen® cohort (n=1082) and the NPH vial cohort (n=794) were of similar age (54.06 vs. 53.13, p=0.134); however, the IDet FlexPen® cohort had a lower proportion of female patients (44% vs. 55%, p<0.001) and fewer patients without a history of pre-index OADs (9% vs 45%, p<0.001), than the NPH vial cohort. After controlling for important confounders, patients initiating insulin therapy with IDet FlexPen® were 39% more likely to achieve an MPR of 0.80 or greater versus patients initiating insulin therapy with NPH vial (95% CI: 1.04-1.85). **CONCLUSIONS:** These results suggest that adherence may be improved for patients initiating basal insulin therapy with IDet in the FlexPen® versus NPH in a vial.

### PDB52

### ADHERENCE WITH ORAL MEDICATIONS FOR DIABETES AMONG BRAZILIAN PATIENTS: A SYSTEMATIC REVIEW OF NATIONAL LITERATURE

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**OBJECTIVES:** To identify studies examining adherence with oral diabetes mellitus (DM) medication and the potential association between adherence rates and glycemic control among Brazilian patients. **METHODS:** A systematic literature search was performed by two independent reviewers using MEDLINE via Pubmed and LILACS databases (until May 2011) without limits for time or language. Specific filters to identify studies assessing Brazilian population were not used in the search strategy and this assessment was conducted by reviewers. Publications were included only if adequate documentation of adherence and population could be abstracted (adherence outcomes, thresholds used, and characteristics of the populations). **RESULTS:** The search strategy identified 289 records (Pubmed=174 and LILACS=115), from which only 2 cross-sectional studies met the eligibility criteria and were included in the systematic review. The most recent study (Araujo 2010) was conducted in 2007 and evaluated 79 DM patients using the 4-item Morisky-Green Test. Gimenes 2006 (n=31) was designed to investigate if DM patients have proper knowledge of their prescription and assessed adherence through self-reported patient compliance with medication schedule. Araujo 2010 found that 54.4% of DM patients were considered non-compliant according to the Morisky-Green Test. Taking medication in the wrong schedule and skipping doses were referred by 54.5% and 34% of patients, respectively. Gimenes 2006 observed that 48.4% of patients reported taking medication in the wrong schedule and 71% of them were classified as having unsatisfactory knowledge about their prescription. Studies examining the association between adherence and glycemic control were not found. **CONCLUSIONS:** This review reinforced the lack of adherence data for Brazilian DM population, but the included studies confirmed that a significant group of DM patients were poor compliers with treatment, although their findings should be interpreted with some concerning given the small sample size and explanatory nature.

### PDB53

### DIABETES MEDICATION ADHERENCE AND GLYCEMIC CONTROL IN PENANG, MALAYSIA

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**OBJECTIVES:** To evaluate the patient's adherence to diabetic medications and the association between medication adherence and diabetic control outcome. **METHODS:** A cross-sectional, investigational study using a convenient sampling method for data collection was employed. A cohort of 540 diabetic patients attending diabetes clinic of Hospital Pulau Pinang, Malaysia was identified. A previously validated Malaysian version of Morisky Medication Adherence Scale (MMAS) was used for the assessment of medication adherence. Medical records were reviewed for Hemoglobin A1C (HbA1C) levels and other diabetes related information. **RESULTS:** Only 505 patients were included in the final analysis. The mean age of the patients was 58.16 years (SD=9.16), with 50.7% males and the mean diabetes duration was 9.68 years (SD=6.31). The mean MMAS scores was 6.11 (SD= 1.66) in which 42.2% were low, 36.4% were medium and only 21.4% were in high adherence group and the mean HbA1C was 7.94 (SD=1.61). Significant association between medication adherence and different educational level, diabetes duration, medication number, self monitoring of blood glucose and glycemic control was found. Higher MMAS score was found in patients with lower HbA1c levels, less number of medications per day, longer diabetes duration, with self monitoring of blood glucose and higher level of education. MMAS scores correlates significantly with HbA1c (- 0.505, p < 0.001). **CONCLUSIONS:** The lower HbA1C results in patients with higher medication adherence can be the result of other factors but this study revealed that adherence is among the modifiable factors that are associated with better glycemic control. The study results reinforce the recommendation for the periodic assessment of medication adherence and the use of educational programs to improve the self-management ability of patients and enhance patients' awareness about glycemic control with diabetes.

### PDB54

### HRQOL AND CLINICAL IMPACT OF MILD PATIENT-REPORTED HYPOGLYCAEMIC EPISODES IN FIVE EUROPEAN COUNTRIES: EXTENT OF AGREEMENT BETWEEN PHYSICIAN- AND PATIENT-REPORTED HYPOGLYCAEMIC EPISODES

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**OBJECTIVES:** To describe the clinical and health-related quality of life (HRQoL) impact of patient-reported mild hypoglycaemic episodes and quantify the extent of physician-reported agreement with patient-reported mild hypoglycaemic episodes in patients with type 2 diabetes mellitus (T2DM). **METHODS:** We have used data from the Adelphi Diabetes VII (2010) Disease Specific Programme (DSP) which collected data from 379 Primary Care physicians (PCPs) across 5 EU countries - France, Germany, Italy, Spain and UK- for patients receiving at least one oral antidiabetic with or without insulin. This generated 1145 physician-completed patient record forms (PRFs) that could be matched directly to patient-completed questionnaires (PSCs). Patients were asked: "How often do you have mild low blood sugar experiences (those you have treated by eating some fruit, fruit juice or a sweet)", while physicians were asked to capture "How often does the patient experience mild (self treated) hypoglycaemic episodes"? **RESULTS:** 88 patients out of 1093 (8.05%) reported hypoglycaemic episodes, whereas physicians reported that only 39 patients (3.57%) suffered hypoglycaemic episodes. Physician and patient did not agree in 55 cases. The Fisher's test suggests that the physician-reported prevalence of hypoglycaemic episodes was not influenced by whether or not the patient completed a PSC (p=0.374). Multivariate regression analysis including age, gender, BMI, and duration of T2DM as covariates shows that the utility decrement (HRQoL) is -0.0687 (p<0.01) between the patients who had experienced hypoglycaemic episodes and those who had not. Patients who reported hypoglycaemic episodes also had a significantly higher $HbA_{1c}$ +0.374 (p<0.01) than those who did not report hypoglycaemia. **CONCLUSIONS:** PCPs in Europe may underestimate the true incidence rate of mild hypoglycaemia as their treated patients report over twice as many as they do. The occurrence of patient-reported hypoglycaemic episodes is associated with lower HRQoL and significantly higher $HbA_{1c}$ and hence has substantial clinical impact.

### PDB55

### TRANSLATION AND VALIDATION STUDY OF 14-ITEM MICHIGAN DIABETES KNOWLEDGE TEST (MDKT): THE URDU VERSION

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**OBJECTIVES:** This study aimed to translate the Michigan Diabetes Knowledge Test (MDKT) into Pakistani (Urdu) language, and to examine the psychometric properties of the Urdu version. **METHODS:** A standard procedure of "forward-backward" translation procedure was used to create the Urdu version of the MDKT from the original English version. A convenience sample of 325 outpatients with type 2 diabetes was approached between June and November 2010. All data were collected from Bolan Medical College Hospital, Quetta, Pakistan. In addition to MDKT, socio-demographic data of the patients was also collected. Patient medical records were explored to get clinical and hemoglobin A1c data. For the purpose of test-rest analysis, Spearman's rho coefficient was used and data was available from 51 patients. Internal consistency was used as a measurement of reliability using Cronbach's alpha. Known group validity was also measured to ensure the consistency of the MDKT. **RESULTS:** By using the recommended scoring methods of MDKT, the mean ± SD of MDKT scores was reported as 7.56±2.98. Cronbach's alpha value was 0.702 showing good internal consistency. Test-retest reliability value was 0.812 (p < 0.001). Significant relationship between MDKT categories and HbA1c categories (chi-square = 20.555; p < 0.001) was found for known group validity. **CONCLUSIONS:** The findings of this validation study reveal that that the Pakistani (Urdu) version of the MDKT is a reliable and valid measure of diabetes knowledge that can be used in clinical and research practice of Pakistani health care system.